

**Notice of Allowability**

Application No.

10/709,177

Examiner

Dalena Tran

Applicant(s)

PREMA ET AL.

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/25/06.
2. ☒ The allowed claim(s) is/are 1, 3-13, 19, 21-25(now renumbered as 1-18).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



### **EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE**

1. This communication is an Examiner's reasons for allowance in response to application filed on 4/19/04, assigned serial 10/709177 and title "Method and system for determining engine state of a hybrid electric vehicle".
2. The following is the Examiner's statement of reasons for the indication of allowable subject matter:

After carefully reviewing the application in light of the amended claims and the additional search of all the possible areas relevant to the present application, a set of related prior art references has been found, but those prior art references are not deemed strong to make the application unpatentable. Thus, it is found that the application is now in condition for allowance.

As per claims 1, 19, and 21, the prior art of record does not disclose a method for controlling on/off states of an engine in a hybrid electric vehicle powertrain, the method comprising the steps of: prioritizing the active request state variables according to a predetermined schedule; selecting at least two active request state variables of higher priority than other request state variables in the plurality of request state variables; evaluating the final request state variable to determine whether a change in engine state is desirable; the step of evaluating the final request state variable comprising: transitioning a state machine from an engine on state to an engine off state in accordance with a first predetermined relationship of engine request variables fpu, pu, ipu and fpd and otherwise maintaining the state machine in an engine on state; and transitioning the state machine from an engine off state to an engine on state in accordance with a second predetermined relationship of engine request variables fpu, pu, ipu and fpd and otherwise maintaining

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the state machine in an engine off state, where fpd, pd, fpu, ipd, pu and ipu are engine request variables, which identify the active or inactive status of engine requests. This limitation in combination with the other elements in the claim was not shown or suggested by the prior art.

As per claim 6, the prior art of record does not disclose the step of evaluating the final request state variable includes the step of: transitioning a state machine from an engine off state to an engine on state in accordance with the following expression:

$$(fpu + pu \cdot \overline{ipu}) \cdot \overline{fpd}$$

where fpu, pu, ipu and fpd are engine request variable identifying the active or inactive status of engine requests. This limitation in combination with the other elements in the claim was not shown or suggested by the prior art.

As per claim 8, the prior art of record does not disclose evaluating the final request state variable including the step of: transitioning a state machine from an engine on state to an engine off state in accordance with the following expression:

$$fpd + pd \cdot \overline{fpu} \cdot \overline{ipd} \cdot \overline{pu}$$

where fpd, pd, fpu, ipd, and pu are engine request variables identifying the active or inactive status of engine requests. This limitation in combination with the other elements in the claim was not shown or suggested by the prior art.

As per claim 9, the prior art of record does not disclose evaluating the final request state variable including the steps of: transitioning a state machine from an engine on state to an engine off state in accordance with the following expression:

$$fpd + pd \cdot \overline{fpu} \cdot \overline{ipd} \cdot \overline{pu}$$

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and otherwise maintaining the state machine in an engine on state; and transitioning state machine from an engine off state to an engine on state in accordance with the following expression:

$$(fpu + pu \cdot \overline{ipu}) \cdot \overline{fpd}$$

and otherwise maintaining the state machine in an engine off state where fpd, pd, fpu, ipd, pu, and ipu are engine request variables identifying the active or inactive status of engine requests. This limitation in combination with the other elements in the claim was not shown or suggested by the prior art.

Claims 1, 3-13, 19, and 21-25, are allowable over the prior art of record.

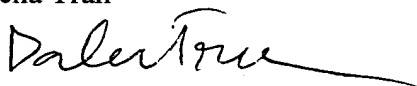
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Dalena Tran



November 21, 2006



UNITED STATES DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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10/709 177

EXAMINER
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ART UNIT	PAPER
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20061121

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The drawing submitted on 4/19/04 has been approved.